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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/541,426	04/03/2000	Kyeong Jin Kim	8733.20102	4200
30827	7590	08/25/2004	EXAMINER	
MCKENNA LONG & ALDRIDGE LLP			NGUYEN, DUNG T	
1900 K STREET, NW			ART UNIT	
WASHINGTON, DC 20006			PAPER NUMBER	
			2871	

DATE MAILED: 08/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/541,426

Applicant(s)

KIM ET AL.

Examiner

Dung Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-57 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/03/2004 has been entered.

Applicants' amendment dated 12/30/2003 has been received and entered. By the amendment, claims 1-57 are pending in the application.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-57 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim et al, US Patent No. 6,654,090.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a

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showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

The above claims are clearly anticipated by Kim et al., figures 5B-5G and accompanying text which discloses a multi-domain liquid crystal display (LCD) device of Applicant's figures 5A-7B, as so claimed in the above claims.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-5, 7-22, 24, 26, 29-33, 35-50, 52, 54 and 57 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Koma, US Patent No. 5,608,556, in view of Auman et al., US Patent No. 6,139,926, as state in the final office action dated 08/14/2002.

Regarding claims 1-5, 7, 11-22, 24, 26, 29-33, 35, 39-50, 52, 54 and 57, Koma discloses a multi-domain LCD device (figures 3, 8 and 10) comprising:

a first substrates (10) and a second substrate (30) facing each other;

a homeotropic liquid crystal layer (41), wherein an alignment direction of the liquid crystal layer in one region is different from that of the other regions during an operation of the pixel (see figure 10);

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a plurality of gate bus lines (12), a plurality of data bus lines (20), a plurality of TFTs (15) including a gate insulator (13), a passivation layer (21), and a pixel electrode (17);

an electric field inducing window (control window 33b) in the pixel electrode, so as the pixel electrode is divided into at least two regions (e.g. four regions/domains in figure 10);

a polyimide alignment layer (23) having a pretilt angle substantially  $1^{\circ}$  (respect to normal line);

Although Koma does not disclose a photo alignment forming on at least one of the first and second substrates, Koma does disclose that the alignment layer is formed by polyimide which can be a photoalignment as shown by Auman et al. (see abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the polyimide photo alignment film of Auman et al. by using a photo-aligning treatment such as exposing the alignment film to UV light in order to avoid electrostatic discharge caused by rubbing process (col. 2, ln. 48). Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use an alignment material selected from the group of PVCN, PSCN and CelCn based compound, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding claims 8-10 and 36-38, the limitation of the gate insulating and/or the passivation layer and/or the pixel electrode are/is patterned recites a one-step process

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which does not further limit the structure of the claimed LCD device. Therefore, the process limitation does not have patentable weight.

6. Claims 27-28 and 55-56 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Koma, US Patent No. 5,608,556, in view of Auman et al., US Patent No. 6,139,926, further in view of Sugiyama et al., US Patent 5,757,455, as stated in the previous office action.

Regarding the above claims, the modification to Koma does not disclose a negative uniaxial film or a negative biaxial film disposed on at least one substrate. Sugiyama et al. disclose a compensation film (e.g., a negative uniaxial film 49) can be formed over at least one substrate of an LCD panel (41) (see figure 10). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to form a negative uniaxial film on at least one substrate of an LCD device because it is a common practice in the art to improve contrast and/or reduce inversion, often in the same viewing areas in an LCD device (see col. 11, lines 30-41).

7. Claims 6 and 34 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Koma, US Patent No. 5,608,556, in view of Auman et al., US Patent No. 6,139,926, further in view of Applicant's submitted prior art, Koma et al., figure 5, "No-Rub Multi-Domain TFT Using Surrounding-Electrode Method", SID, 1995, pages 869-872, as stated in the previous office action.

Regarding claims 6 and 34, although Koma ('556) does not disclose the "L-shaped" TFT in the LCD device, it would have been obvious to one skill in the art to form a TFT having a "L-shaped" as evidence from the Applicant's submitted prior art,

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Koma et al. figure 5 since it is well known in the art in order to increase an aperture ratio of an LCD device.

8. Claims 23 and 25 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Koma, US Patent No. 5,608,556, in view of Auman et al., US Patent No. 6,139,926, further in view of Bos et al., US Patent No. 6,141,074, as stated in the previous office action.

Regarding the above claims, the modification to Koma discloses the claimed invention as described above except for the liquid crystal layer which has a positive or negative dielectric anisotropy and chiral dopants. Bos et al. do disclose a multi-domain LCD which can be formed with a positive or negative dielectric anisotropy liquid crystal layer (see Summary of the Invention). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to form a liquid crystal layer having a positive dielectric anisotropy or negative dielectric anisotropy because the use of one conventional material over another merely depends on the desire of the manufacturer (i.e., homogeneous or homeotropic alignment) and/or the availability and practicality of the material for the chosen manufacturing process (see Summary of the Invention).

9. Claims 51 and 53 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Koma, US Patent No. 5,608,556, in view of Auman et al., US Patent No. 6,139,926, further in view of Van De Witte, US Patent No. 5,936,692, as stated in the previous office action.

Regarding the above claims, Koma discloses the claimed invention as described above except for the liquid crystal layer including chiral dopants. However, Van De

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Witte does disclose that an LCD can be included a chiral dopant (col. 2, ln. 21).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to form a chiral dopant in an LCD device as shown by Van de Witte since it is a common practice in the art to obtain a uniform twist sense (col. 2, ln. 24).

### *Double Patenting*

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 1-57 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 3, 8, 11, 13-14, 18-19, 22 and 27-30 of U.S. Patent No. 6,654,090. Although the conflicting claims are not identical, they are not patentably distinct from each other because both application and patent disclose the same a multi domain LCD device having an electric field inducing window as well as a photo-alignment layer having a pre-tilt angle on at least one of first and second substrates.



***Response to Arguments***

12. Applicant's arguments filed 12/30/2003 have been fully considered but they are not persuasive.

13. Regarding the rejection under 35 U.S.C. 103(a), Applicants contend that none of the cited references, singly or in combination, teaches or suggest at least the feature of “a photo-alignment layer ... irradiated by a light” (amendment, page 9). In particular, Applicants state that Koma’s alignment is mainly determined by the liquid crystal and the alignment layer used, but not by an alignment treatment as recited in claim 1 (i.e., no alignment treatment); as a result, there would have been no motivation to combine Koma with Auman, since Auman et al. teach away from the teaching of Koma (amendment, page 10). The Examiner is not convinced by this argument. As stated in the previous office action, although Koma discloses that “rubbing treatment of the orientation film 23 is not required” (col. 6, ln. 14-15), it does not mean that Koma does not employ any alignment treatment as asserted by Applicants. On the other hand, Koma does disclose an orientation film 23 is laminated on the full face for vertical orientation as a surface orientation treatment (emphasis added)(i.e., the alignment direction of liquid crystal molecules would be aligned based on physical property of alignment layer)(col. 6, ln. 10-12). Since Koma does disclose a surface orientation treatment, the combination of Koma and Auman et al. would have been obvious to one skilled in the art as described above.

Accordingly, the rejection of claims 1-57 stand.

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*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung Nguyen whose telephone number is 571-272-2297. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DN  
08/21/2004

A handwritten signature in black ink, appearing to read 'Dung Nguyen', with a long horizontal flourish extending to the right.

**Dung Nguyen**  
**Primary Examiner**  
**Art Unit 2871**